

OPERATING SUMMARY

CITY OF  
**STRATFORD**

WATER POLLUTION CONTROL PLANT

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STRATFORD  
WATER POLLUTION CONTROL PLANT

operated for

THE CITY OF STRATFORD

by the

MINISTRY OF THE ENVIRONMENT

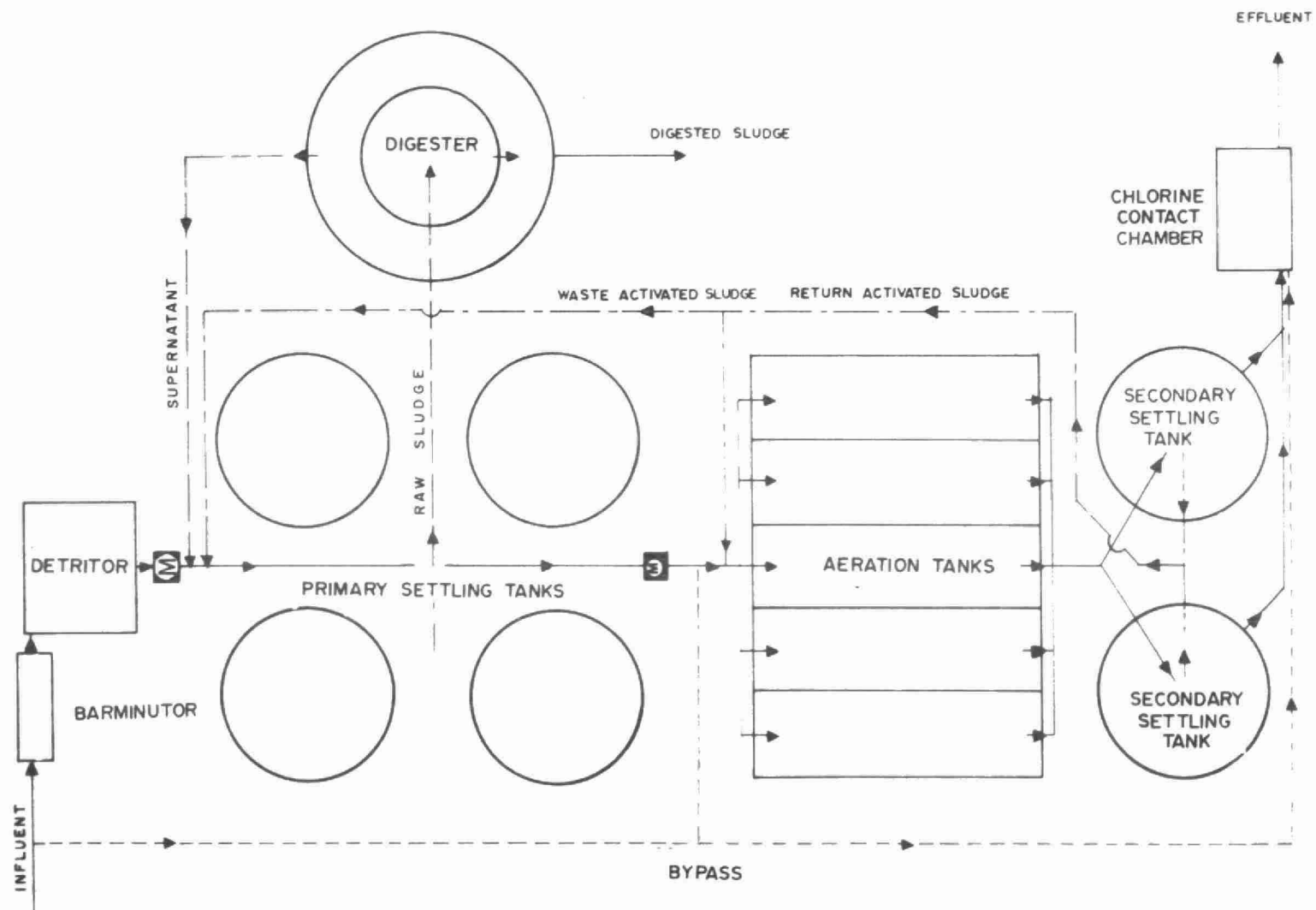
1974 ANNUAL OPERATING SUMMARY

prepared by  
Plant Performance Unit  
TECHNICAL SERVICES BRANCH  
T. Cross, Director

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# CITY OF STRATFORD WPCP



# DESIGN DATA

PROJECT City of Stratford WPCP

PROJECT NO. 2-0002-57

TREATMENT Activated Sludge

DESIGN FLOW 6.0 mgd

DESIGN POPULATION 30,000

BOD - Raw Sewage 140 mg/l  
- Removal 90%

SS - Raw Sewage 250 mg/l  
- Removal 95%

## PRIMARY TREATMENT

### Comminution

Type: Barminutor  
Size: One Model C (36")

### Grit Removal

Type: Dorr detritor  
Size: One 20' x 20' x 1' (2500 gal)  
Retention: 0.9 min

### Primary Sedimentation

Type: Infilco  
Size: Four 80' dia x 10½' swd (1.32 mil gal)  
NOTE: Two used for storm flows only  
Retention: 2.7 hr (2 cl)  
Loading: Surface, 600 gal/ft<sup>2</sup>/day  
Weir, 12,000 gal/ft/day

## SECONDARY TREATMENT

### Aeration Tanks

Type: Diffused air; triple-pass  
Size: Five 85½' x 25' 8" (avg) x 13' (0.97 mil gal)  
Retention: 3.9 hr

### Diffusers

Type: Activated Sludge Ltd.  
Alundum Domes

### Air Supply

Type: Roots-Connersville  
Size: Three 1750 cfm

## Secondary Sedimentation

Type: Infilco  
Size: Two 80' dia x 11' 3" swd (0.705 mil gal)  
Retention: 2.7 hr  
Loading: Surface, 600 gal/ft<sup>2</sup>/day  
Weir, 12,000 gal/ft/day

## CHLORINATION

### Chlorine Contact Chamber

Size: 67' x 27' x 8' (90,000 gal)  
Retention: 22 min

### Chlorinator

One F & P 500 lb/day

## OUTFALL

Avon River

## SLUDGE HANDLING

Digestion System - Heated, two-stage

Type: Gas mixed  
Size: One 73' dia x 26' swd (100,000 cu ft or 0.624 mil gal)

### Primary Stage (inner)

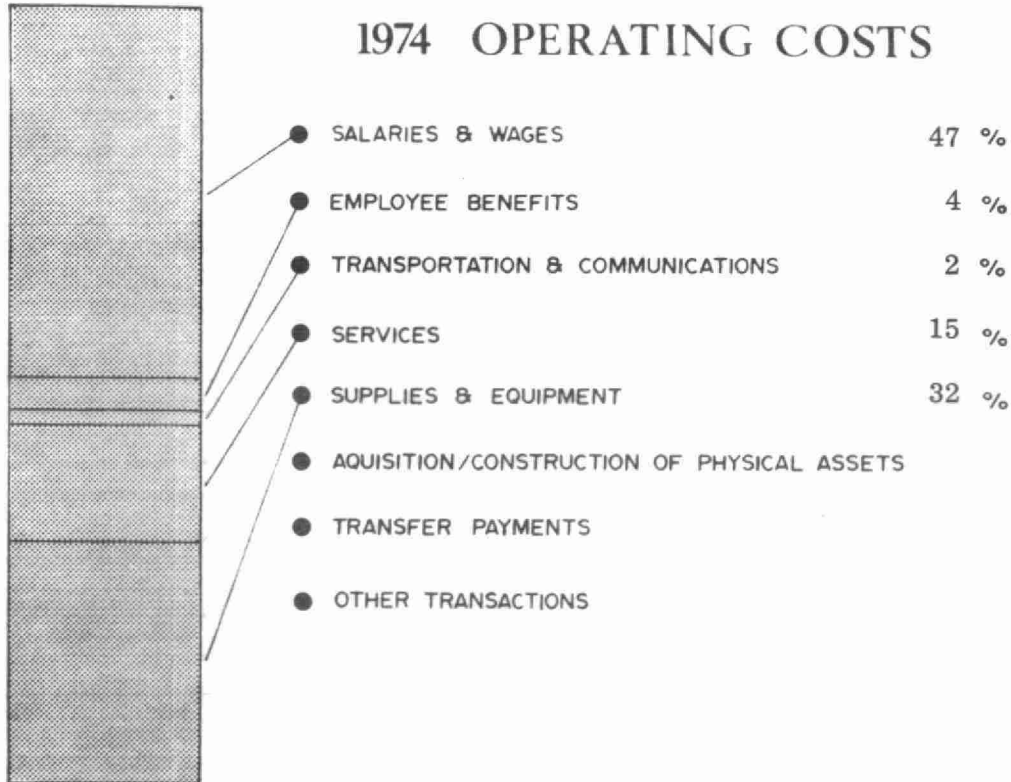
Size: 67,600 cu ft  
Loading: 2.8 lb/cu ft/mo

### Secondary Stage (outer ring)

Size: 32,400 cu ft  
Total Loading: 1.9 lb/cu ft/mo

# ANNUAL COSTS

## 1974 OPERATING COSTS



## YEARLY OPERATING COSTS

YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			\$/M.G.	¢/lb BOD
1969	1322	75,996	57	6
1970	1178	80,123	68	4
1971	1168	86,609	73	9
1972	1314	88,838	68	7
1973	1305	108,329	83	4
1974	1371	151,268	110	11

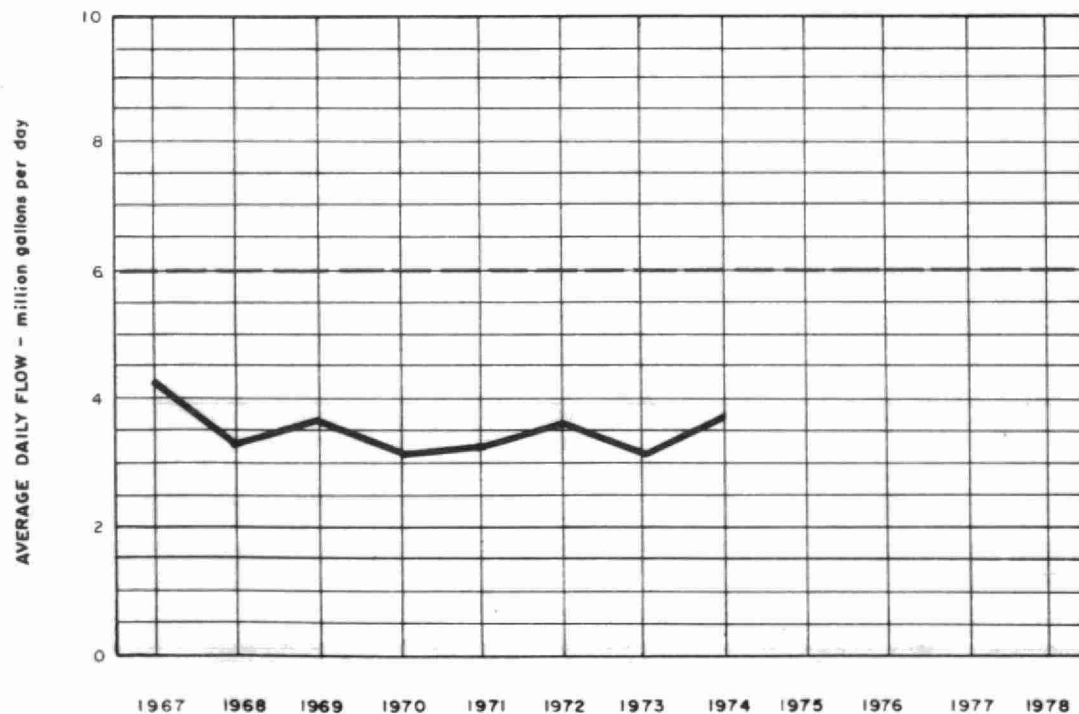
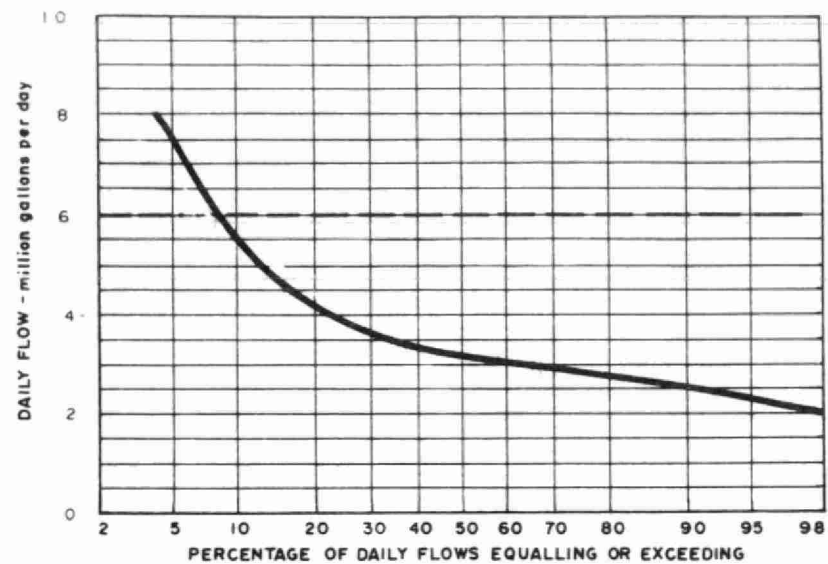
# OPERATING EXPENDITURES

Regular Staff	\$ 68,722	\$
Casual (Unclassified) Staff	1,434	
TOTAL SALARIES AND WAGES		70,156
TOTAL EMPLOYEE BENEFITS		6,926
TOTAL TRANSPORTATION AND COMMUNICATIONS		2,797
Insurance	1,224	
Sludge Haulage	19,546	
Repairs and Maintenance	1,365	
Other Services	310	
TOTAL SERVICES		22,445
Machinery and Equipment	3,942	
Chemicals	12,216	
Utilities	10,904	
Other Supplies and Equipment	21,882	
TOTAL SUPPLIES AND EQUIPMENT		48,944
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		-
TOTAL TRANSFER PAYMENTS		-
OTHER TRANSACTIONS		-
GRAND TOTAL	GRAND TOTAL	\$ 151,268



# PROCESS DATA

# FLows

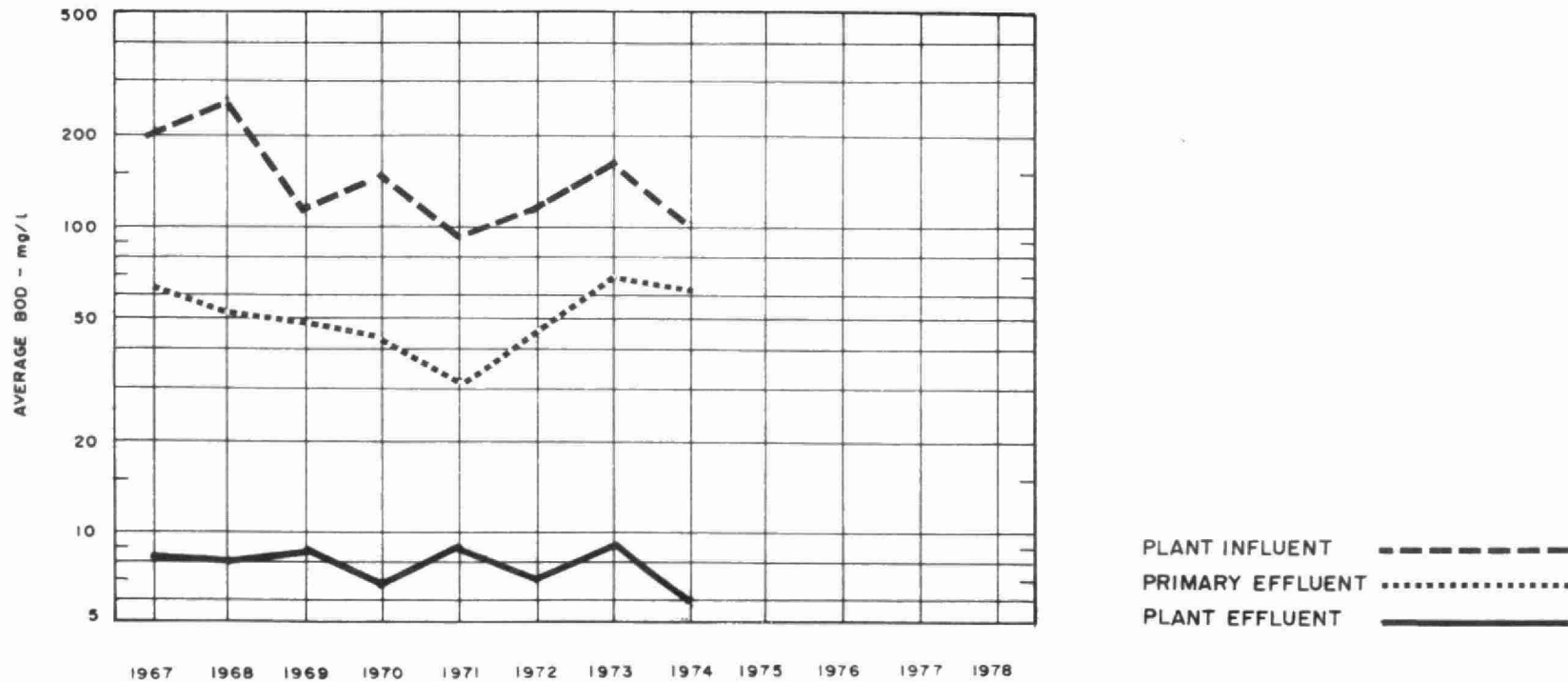
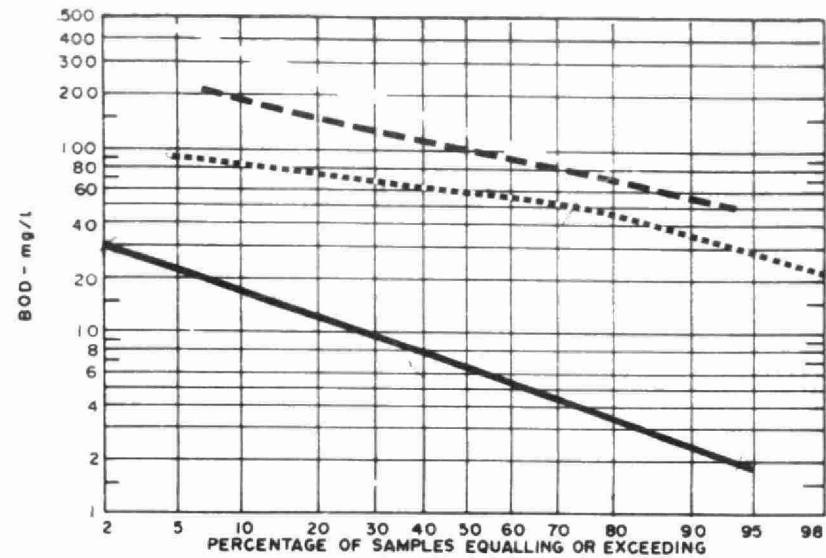


DESIGN CAPACITY - - - - -

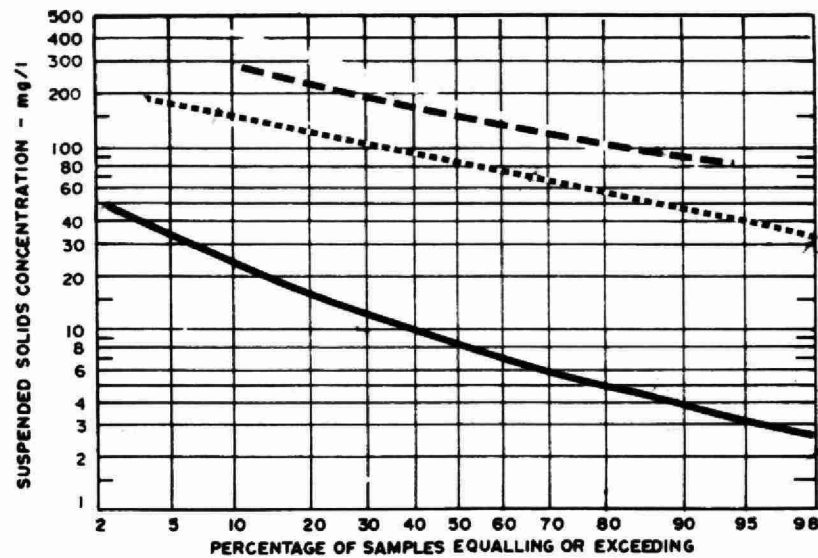
## PLANT PERFORMANCE




MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 <sup>3</sup> pounds	mg/l	mg/l	%	10 <sup>3</sup> pounds	mg/l P	mg/l P
JAN	134.53	4.33	12.6	99	14	86	114	117	14	88	138	4.3	2.2
FEB	95.61	3.41	8.0	100	6	94	90	184	10	95	166	5.1	1.4
MAR	153.29	4.94	13.6	83	7	92	117	131	7	95	190	4.2	.9
APR	142.74	4.76	10.9	96	5	95	130	146	6	96	200	4.3	.3
MAY	158.60	5.12	14.9	95	8	92	138	200	11	95	300	5.0	1.1
JUNE	92.06	3.06	4.7	102	4	96	90	207	8	96	183	6.1	.8
JULY	81.07	2.61	3.3	117	4	97	92	204	5	98	161	5.3	.9
AUG	92.11	2.97	3.4	187	23	88	151	190	20	89	157	8.0	1.0
SEPT	93.96	3.13	4.6	204	5	98	187	231	7	97	210	5.9	1.2
OCT	98.07	3.16	4.6	144	5	97	136	374	5	99	362	7.6	.8
NOV	130.30	4.34	10.7	88	8	91	104	156	8	95	193	4.6	.7
DEC	99.06	3.20	3.9	105	6	94	98	226	8	96	215	5.6	1.3
TOTAL	1371.40	-	-	-	-	-	1412	-	-	-	2468	-	-
AVG.		3.75	MAXIMUM 14.9	109	6	94	118	189	9	95	206	5.2	.9
No. of Samples	-	-	-	94	97	-	-	118	113	-	-	124	143

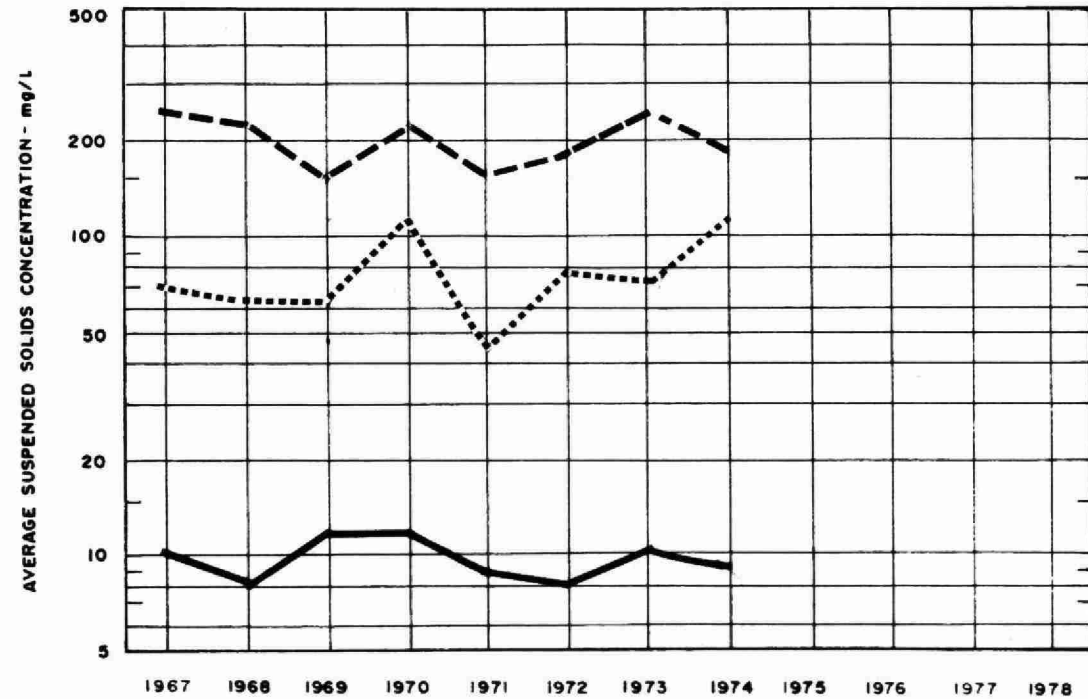
# BIOCHEMICAL OXYGEN DEMAND



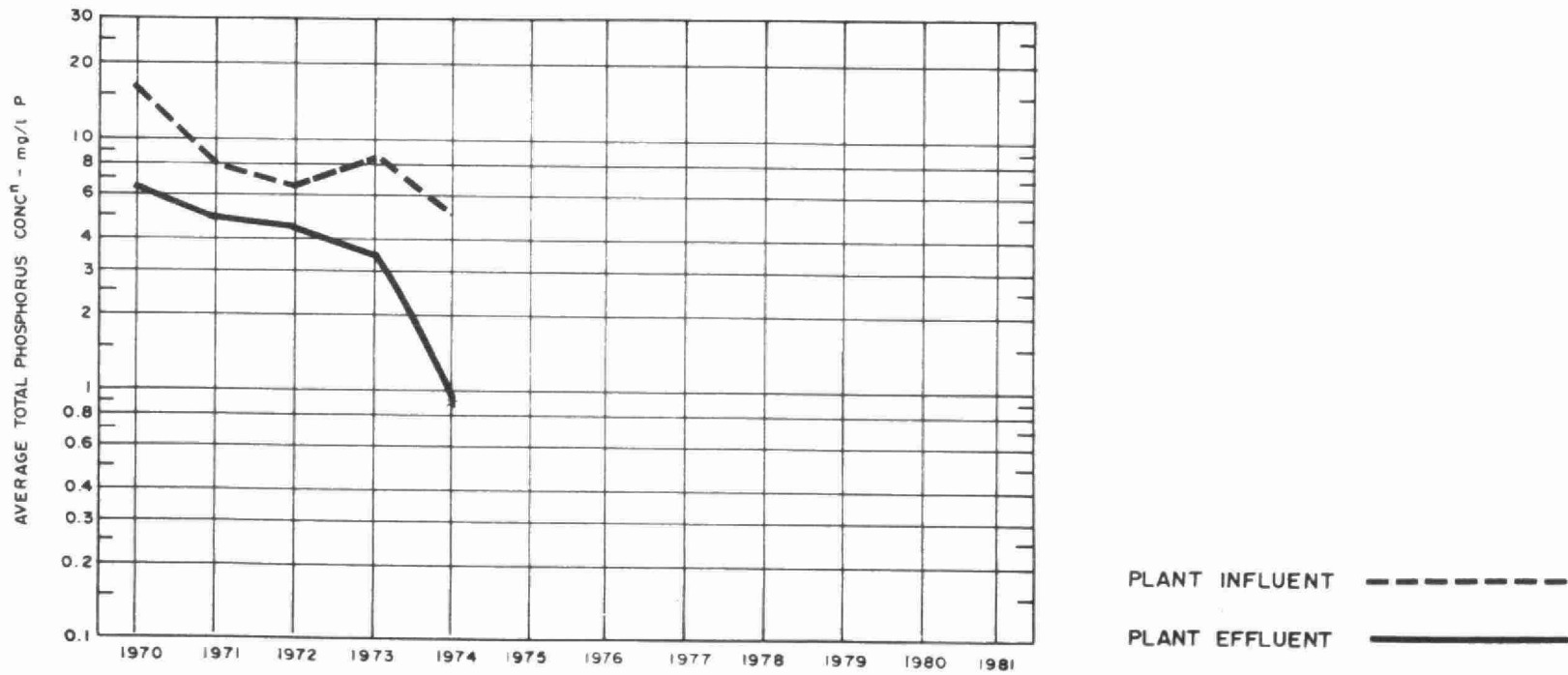
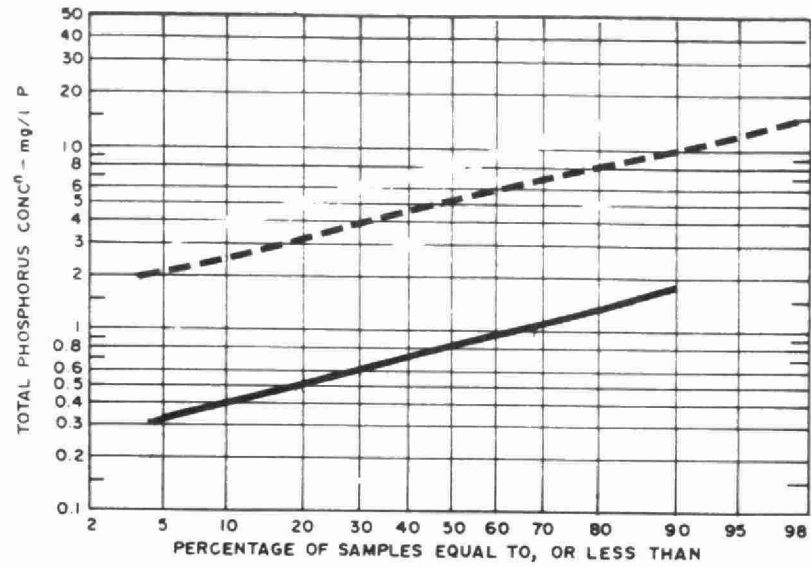
# SUSPENDED SOLIDS



PLANT INFLUENT        
 PRIMARY EFFLUENT      
 PLANT EFFLUENT      

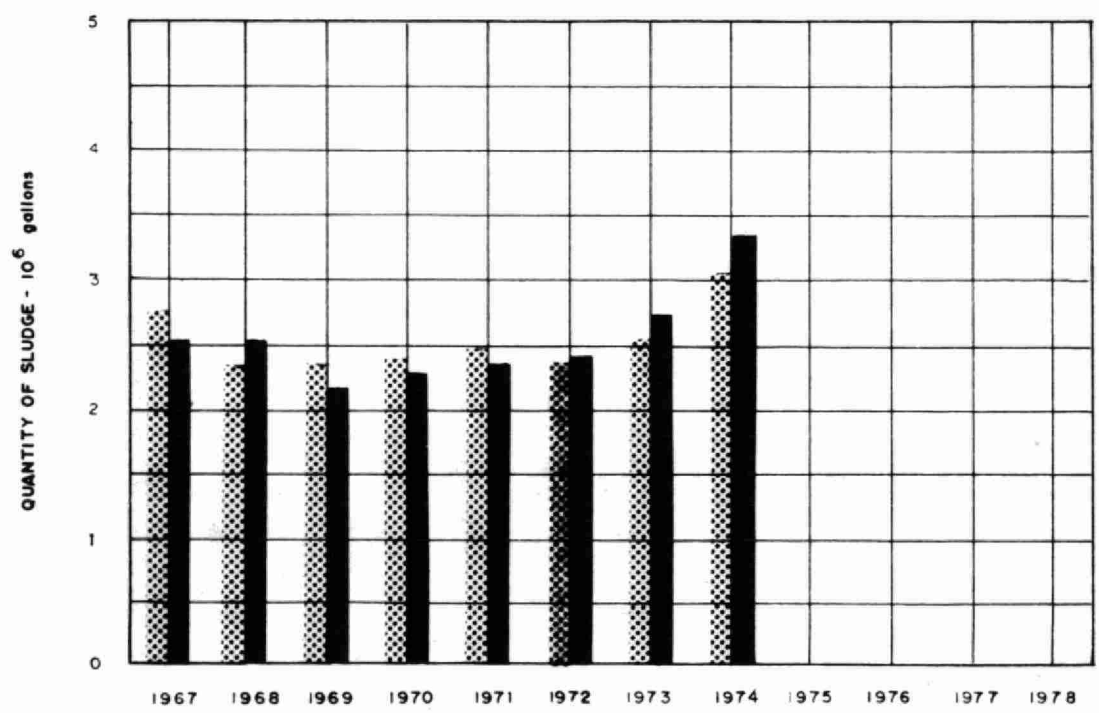
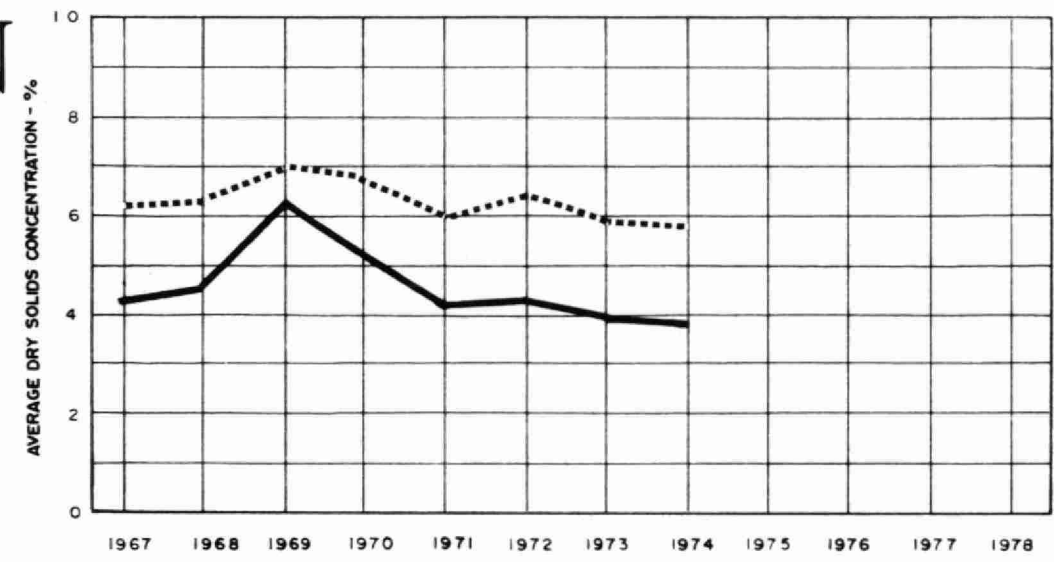


# PHOSPHORUS



# DIGESTION

RAW SLUDGE .....  
DIGESTED SLUDGE ———



RAW SLUDGE TO DIGESTER ▨  
DIGESTED SLUDGE REMOVED ■

# TREATMENT DATA

MONTH	GRIT	CHLORINATION		PRIMARY EFFLUENT		AERATION			SLUDGE DIGESTION and DISPOSAL							
	QUANTITY REMOVED cubic feet	CL <sub>2</sub> USED 10 <sup>3</sup> pounds	AVG. DOSE mg/l	BOD mg/l	SUSPENDED SOLIDS mg/l	MLSS CONC mg/l	F/M day <sup>-1</sup>	AIR 1000 ft <sup>3</sup> lb BOD	RAW SLUDGE			DIGESTED SLUDGE			SUPER- NATANT T. S. %	AMOUNT HAULED cubic yards
									QUANTITY 10 <sup>3</sup> gallons	TOTAL SOLIDS %	VOL. SOLIDS %	QUANTITY 10 <sup>3</sup> gallons	TOTAL SOLIDS %	VOL. SOLIDS %		
JAN	125	4.2	3.1	65	96	2530	.12	1.5	238	4.9	69	312	3.8	57		1855
FEB	41	2.4	2.5	51	78	2090	.18	2.1	213	5.6	65	301	3.9	60		1786
MAR	154	2.4	1.5	50	68	1980	.13	1.5	244	6.3	60	200	4.1	56		1185
APR	61	2.2	1.6	52	68	1930	.14	1.6	207	5.8	62	318	4.1	52		1888
MAY	30	2.4	1.5	55	67	1800	.16	1.4	219	6.3	59	164	3.7	51		974
JUNE	34	2.3	2.6	65	99	1700	.12	1.8	248	6.2	56	293	4.4	48		1741
JULY	25	2.0	2.4	62	99	1800	.10	2.2	270	6.6	57	379	4.3	47		2250
AUG	20	2.5	2.7	78	84	1800	.13	2.2	280	6.4	58	265	4.5	55		1575
SEPT	26	1.8	1.9	88	90	1870	.16	1.4	282	5.9	59	326	4.3	56		1932
OCT	29	1.6	1.6	68	296	1900	.12	2.0	305	5.5	58	228	3.6	52		1355
NOV	53	2.0	1.5	51	98	2200	.11	1.7	263	5.4	62	386	3.4	49		2288
DEC	26	3.0	3.0	68	266	1700	.14	1.8	261	5.2	60	275	3.5	54		1632
TOTAL	624	28.8	-	-	-	-	-	-	3030	-	-	3447	-	-	-	20461
AVG.	.4 cu. ft/mil gal	2.4	2.1	61	108	1900	.13	1.7	252	5.8	60	287	3.9	56		1705

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